

## **AGENDA**

### **TUSAYAN TOWN COUNCIL REGULAR MEETING**

PURSUANT TO A.R.S. § 38-431.02 & §38-431.03

Wednesday, November 19, 2014 at 6:00pm

TUSAYAN TOWN HALL BUILDING

845 Mustang Drive, Tusayan Arizona

Pursuant to A.R.S. § 38-431.02, notice is hereby given to the members of the Tusayan Town Council and to the general public that the Tusayan Town Council will hold a meeting open to the public on Wednesday, November 19, 2014 at the Tusayan Town Hall Building. If authorized by a majority vote of the Tusayan Town Council, an executive session may be held immediately after the vote and will not be open to the public. The Council may vote to go into executive session pursuant to A.R.S. § 38-431.03.A.3 for legal advice concerning any matter on the agenda, including those items set forth in the consent and regular agenda sections. The Town Council may change, in its discussion, the order in which any agenda items are discussed during the course of the meeting.

Persons with a disability may request a reasonable accommodation by contacting the Town Manager at (928) 638-9909 as soon as possible.

As a reminder, if you are carrying a cell phone, electronic pager, computer, two-way radio, or other sound device, we ask that you silence it at this time to minimize disruption of today's meeting.

### **TOWN COUNCIL REGULAR MEETING AGENDA**

#### **1. CALL TO ORDER AND PLEDGE OF ALLEGIANCE**

#### **2. ROLL CALL**

**MAYOR GREG BRYAN**

**VICE MAYOR CRAIG SANDERSON**

**COUNCILMEMBER BILL FITZGERALD**

**COUNCILMEMBER AL MONTOYA**

**COUNCILMEMBER JOHN RUETER**

❖ *One or two Council Members may attend by telephone*

#### **3. CALL TO THE PUBLIC FOR ITEMS NOT ON THE AGENDA**

*Members of the public may address the Council on items not on the printed agenda. The Council may not discuss, consider or act upon any matter raised during public comment. Comments will be limited to three minutes per person.*

*Members of the audience who wish to speak to the Council on an item listed as Public Hearing should complete a Request to Speak Card and turn it into the Town Clerk. Speakers will be limited to three minutes each.*

#### **4. CEREMONIAL AND/OR INFORMATIONAL MATTERS**

**Swearing-in of newly re-elected Councilmember Craig Sanderson**

#### **5. CONSENT AGENDA**

*Items on the consent agenda are routine in nature and will be acted on with one motion and one vote. Members of the council or staff may ask the mayor to remove any item from the consent agenda to be discussed and acted upon separately.*

**A. Minutes of the Town Council Workshop and Regular Meeting on 11/5/14**

**B. Accounts Payable Billings**

**6. COMMITTEE REPORTS**

- A. Update on the Sports Complex Committee
- B. Update on the Planning and Zoning Commission

**7. ACTION ITEMS**

- A. Consideration, discussion, and possible approval of Resolution No. 2014-08: A resolution of the Mayor and Council of the Town of Tusayan, Coconino County, Arizona, declaring and adopting the results of the General Election held on November 4, 2014
- B. Consideration, discussion, and possible approval of Sewer System Report for the School/Park Sewer Extension Improvements from Woodson Engineering
- C. Consideration, discussion, and possible approval of possible change to the order for blinker signs for 2 crosswalks in Town

**8. DISCUSSION ITEM**

- A. Discussion of additional funding options for Tusayan Fire District (TFD)
- B. Update on report from J2 Engineering
- C. Update on sidewalk near FSR302

**9. TOWN MANAGER'S REPORT**

**10. FUTURE AGENDA ITEMS**

**11. COUNCIL MEMBERS' REPORTS**

**12. MAYOR'S REPORT**

**13. MOTION TO ADJOURN**

**CERTIFICATION OF POSTING OF NOTICE**

The undersigned hereby certifies that a copy of the foregoing notice was duly posted at the General Store in Tusayan, Arizona on this 13<sup>th</sup> day of November, 2014, at 3:18 pm in accordance with the statement filed by the Tusayan Town Council.

  
\_\_\_\_\_  
Signature of person posting the agenda

ITEM NO. 5A

# **TUSAYAN TOWN COUNCIL MUNICIPAL CODE WORKSHOP**

PURSUANT TO A.R.S. § 38-431.02 & §38-431.03

Wednesday, October 15, 2014 at 5:00pm

TUSAYAN TOWN HALL BUILDING

845 Mustang Drive, Tusayan Arizona

## **TOWN COUNCIL SUMMARIZED MINUTES**

### **1. CALL TO ORDER AND PLEDGE OF ALLEGIANCE**

Mayor Bryan called the meeting to order at 5:05pm and the Pledge of Allegiance was recited.

### **2. ROLL CALL**

Upon roll call, the following were present:

**MAYOR GREG BRYAN**

**VICE MAYOR AL MONTOYA**

**COUNCILMEMBER BILL FITZGERALD**

**COUNCILMEMBER JOHN RUETER** – arrived at 5:49pm

**COUNCILMEMBER CRAIG SANDERSON** - excused

Also present were:

Will Wright, Town Manager

Melissa Malone, Town Clerk

### **3. DISCUSSION OF DRAFT LANGUAGE FOR THE TUSAYAN MUNICIPAL CODE**

Manager Wright introduced the Chapters and stated that the Town Attorney is now working on revising the sections regarding the Mayor since the initiative regarding direct election of the Mayor appears to have passed in yesterday's election.

#### **A. Chapter 2 – Mayor and Council**

The Council discussed the Chapter and had the following questions/changes:

- 2.3.5 Quorum – Can members attending via phone count as part of the quorum?
- 2.3.6.A. - should list one (1) Council member in addition to the Mayor, not 2.
- 2.3.6.A. - When the Ordinance is adopted, a policy will also be adopted setting the minimum time required for adding Action Items to an Agenda
- 2.3.7 - switch the order of D and E
- 2.3.7.E. - remarks "may" be limited to 3 minutes instead of "shall"
- 2.3.9.B. Voting – Add – Council Members must state any reason for abstaining from a vote (Manager Wright will consult with the Town Attorney on this.)
- Listen...

#### **B. Chapter 3 – Manner of Elections**

- Clerk Drake will research this section to ensure compliance with the latest election laws

- Legislative report - is this required?
- Article 4 – Referenda, not Referendums

### **C. Chapter 5 – Boards and Commissions**

5.1.1 – P&Z terms should be 4 years, check last ordinance.

### **4. MOTION TO ADJOURN**

Vice Mayor Montoya made a motion to adjourn the meeting at 5:52pm.  
Councilmember Fitzgerald seconded the motion and it passed on unanimous vote.

**ATTEST:**

\_\_\_\_\_  
**Greg Bryan, Mayor**                      **Date**

\_\_\_\_\_  
**Melissa M. Drake, Town Clerk**

### **CERTIFICATION**

State of Arizona            )  
  ) ss.  
Coconino County            )

I, Melissa M. Drake, do hereby certify that I am the Town Clerk of the Town of Tusayan, County of Coconino, State of Arizona, and that the above minutes are a true and correct summary of the meeting of the Council of the Town of Tusayan held on November 5, 2014. I further certify that the meeting was duly called and held, and that a quorum was present.

**DATED this 13<sup>th</sup> day of November, 2014**

\_\_\_\_\_  
**TOWN CLERK**

## **TUSAYAN TOWN COUNCIL REGULAR MEETING**

PURSUANT TO A.R.S. § 38-431.02 & §38-431.03

Wednesday, October 15, 2014 at 6:00pm

TUSAYAN TOWN HALL BUILDING

845 Mustang Drive, Tusayan Arizona

### **TOWN COUNCIL SUMMARIZED MINUTES**

#### **1. CALL TO ORDER AND PLEDGE OF ALLEGIANCE**

Mayor Bryan called the meeting to order at 6:04pm and the Pledge of Allegiance was recited.

#### **2. ROLL CALL**

**MAYOR GREG BRYAN**

**VICE MAYOR AL MONTOYA**

**COUNCILMEMBER BILL FITZGERALD**

**COUNCILMEMBER JOHN RUETER**

**COUNCILMEMBER CRAIG SANDERSON** – via phone

Also present were:

Will Wright, Town Manager

Melissa M. Drake, Town Clerk

#### **3. CALL TO THE PUBLIC FOR ITEMS NOT ON THE AGENDA**

John Vail, representing the Tusayan Fire District (TFD), asked that the TFD item for discussion tonight be postponed until the TFD Board meets.

#### **4. CEREMONIAL AND/OR INFORMATIONAL MATTERS**

##### **A. Swearing-in of newly re-elected Council Members**

Mayor Bryan swore in Councilmembers Fitzgerald and Rueter and they signed their Loyalty Oaths. Councilmember Sanderson will be sworn-in at the next meeting.

##### **B. Presentation from ADOT representatives Sonya Herrera and John Nichols regarding Grand Canyon National Park Airport**

John Nichols and Sonya Herrera presented the Council with information on the history, current status, water issues, and future plans for Grand Canyon National Park Airport. They answered questions from the Council.

##### **C. Presentation from John Champagne with Commnet regarding upgrades of internet connectivity at Town Hall and in Tusayan**

John Champagne, with Commnet Wireless, spoke about Commnet as a rural carrier, their presence in Arizona (and Tusayan specifically) and their future plans. He also answered questions from the Council and discussed next steps.

**The Council took a break from 7:48pm to 7:54pm.**

## **5. CONSENT AGENDA**

### **A. Minutes of the Town Council Workshop and Regular Meeting on 10/15/14**

### **B. Accounts Payable Billings**

Vice Mayor Montoya made a motion to approve the Consent Agenda.  
Councilmember Rueter seconded the motion and it passed on unanimous vote.

## **6. COMMITTEE REPORTS**

### **A. Update on the Sports Complex Committee**

Manager Wright stated that a document from Woodson Engineering was provided to the Council. In it, there was an update on the design of the sewer lines for the Complex. He also stated that the aerial survey was flown yesterday. Manager Wright will contact the School District Attorney to inquire about the delay in the School Board's approval.

### **B. Update from the Planning and Zoning Commission**

The Planning and Zoning Commission met on October 23, 2014 and approved the next phase design review at the Best Western Grand Canyon Squire Inn including the Building 3000 remodel and the new laundry building.

## **7. ACTION ITEMS**

### **A. Consideration, discussion, and selection of Mayor**

Councilmember Rueter nominated Greg Bryan for Mayor. Vice Mayor Montoya seconded the motion and the vote for Mayor Bryan was unanimous.

### **B. Consideration, discussion, and selection of Vice Mayor**

Vice Mayor Montoya nominated Craig Sanderson for Vice Mayor. Councilmember Rueter seconded the motion. Councilmember Sanderson accepted the nomination. The vote for Councilmember Sanderson was unanimous.

### **C. Consideration, discussion, and possible approval of purchase of blinker sign systems for 2 crosswalks**

Manager Wright reviewed the status of installing improvements to the crosswalks in Town.

Councilmember Fitzgerald made a motion to approve the purchase of the blinker signs for 2 crosswalks (2<sup>nd</sup> and 3<sup>rd</sup> from the North) on Highway 64 in Town at approximately \$7,500 per crosswalk. Councilmember Rueter seconded the motion and it passed on unanimous vote.

**D. Consideration, discussion, and possible approval of 2015 Meetings Calendar**

Manager Wright stated that the Town Clerk created the calendar based on the 2014 calendar. The Council discussed the calendar.

Mayor Bryan made a motion to approve the calendar with the removal of the meeting on July 22<sup>nd</sup>. Councilmember Rueter seconded the motion and it passed on unanimous vote.

**E. Consideration, discussion, and possible approval of Scope of Services from J2 Engineering for Tusayan Drainage Improvements**

Manager Wright noted an e-mail from Clarinda Vail requesting a delay on this discussion due to errors in the report regarding private property ownership in Town. Manager Wright stated that the Scope was a general overview with the highest priority task being the detention basins. He also stated that any work would only progress as approved by any private or public entities involved and private property owners would have the ability to give input. He recommended moving forward with Task 300 – Design of Detention Basins / Stock Tanks.

Manager Wright will clarify with J2 Engineering what the justification is for a rain gauge and research what the airport already has.

Councilmember Fitzgerald made a motion to approve Task 300. Councilmember Rueter seconded the motion and it passed on unanimous vote.

**8. DISCUSSION ITEM**

**Discussion of additional funding options for Tusayan Fire District (TFD)**

This item was postponed at the request of the TFD.

**9. TOWN MANAGER'S REPORT**

Manager Wright noted the following from his report which was in the packet:

- The Town will finally be a member of ASRS in December
- Sidewalks at Town Hall are almost complete
- Installation of the sign at the Sports Complex is in progress
- He also discussed upcoming training for himself and staff

**10. FUTURE AGENDA ITEMS**

- 11/19/14 – Swearing of Councilmember Sanderson
- 11/19/14 – possible update from J2
- 11/19/14 – possible update from Commnet
- 11/19/14 – update on the crosswalks
- 11/19/14 – update on the sidewalk near FSR302
- 12/3/14 – Possible update from Commnet



## 11. COUNCIL MEMBERS' REPORTS

None

## 12. MAYOR'S REPORT

Mayor Bryan thanked Councilmember Rueter for attending a NACOG meeting last month. CPWAC has asked for a letter of support for their application with the Corps of Engineers. Mayor Bryan asked the Council if there were any objections to sending it. There were none.

## 13. MOTION TO ADJOURN

Councilmember Montoya made a motion to adjourn the meeting at 8:57pm.  
Councilmember Fitzgerald seconded the motion and it passed on unanimous vote.

ATTEST:

\_\_\_\_\_  
Greg Bryan, Mayor

\_\_\_\_\_  
Date

\_\_\_\_\_  
Melissa M. Drake, Town Clerk

## CERTIFICATION

State of Arizona       )  
                                  ) ss.  
Coconino County       )

I, Melissa M. Drake, do hereby certify that I am the Town Clerk of the Town of Tusayan, County of Coconino, State of Arizona, and that the above minutes are a true and correct summary of the meeting of the Council of the Town of Tusayan held on November 5, 2014. I further certify that the meeting was duly called and held, and that a quorum was present.

DATED this 13<sup>th</sup> day of November, 2014

\_\_\_\_\_  
Town Clerk

ITEM NO. 7B



Will Wright &lt;tusayantownmanager@gmail.com&gt;

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**RE: Tusayan Project Summary - Woodson Engineering (114675 T-14)**

3 messages

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**Rick Schuller** <rschuller@woodsoneng.com>  
To: Will Wright <tusayantownmanager@gmail.com>

Fri, Nov 7, 2014 at 1:09 PM

Good morning Will – please find attached our Plans and Report for the sewer and water extension project to the school and park. The plans show an alignment which hasn't been discussed yet. The old sewer design attached is the alignment that has been discussed. The old alignment had a large cut area that may be more costly due to the rock excavation. So we came up with a new alignment which isn't as deep that we prefer. This alignment should be agreed upon by all before transmitting to ADOT, I feel. From a capacity standpoint it doesn't matter.

Please take a look at the items and let me know what you think. The cost estimate for the sewer is \$190,000 and \$230,000 for the water. This does not include the utilities on the park site.

Thanks,

Rick Schuller

**From:** Will Wright [mailto:tusayantownmanager@gmail.com]  
**Sent:** Friday, November 07, 2014 8:24 AM  
**To:** Rick Schuller  
**Subject:** Re: Tusayan Project Summary - Woodson Engineering

Rick: Thanks for this summary. We need to get the utility easement data to ADOT, Mike Thomas, so they can move our request to tie into their utilities forward. I believe you have Mike's contact information mthomas@azdot.gov and their main number is 928-638-2446. Again, thanks for the report as the Council reviewed it in their Council meeting Wednesday.

Will Wright, Manager

Town of Tusayan

928-637-4297 cell

928-638-9909 office

# SEWER SYSTEM REPORT

FOR

## The School/Park Sewer Extension Improvements

November 2014

**Project Locations:**

Tusayan, AZ

**Prepared For:**

Town of Tusayan

**Prepared By:**

\_\_\_\_\_  
Mike Farley, P.E.

**PRELIMINARY  
NOT FOR CONSTRUCTION  
OR RECORDING**

# WOODSON

**ENGINEERING AND SURVEYING, INC.**

124 N. Elden St. • Flagstaff, AZ • 86001-5262

Phone: (928) 774-4636 • Fax: (928) 774-4646

[www.woodsoneng.com](http://www.woodsoneng.com)

WES Project No. 114682

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## **APPENDICES**

### **Appendix A: Exhibits**

Figure 1: Vicinity Map

Figure 2: Proposed School Sewer

Figure 3: Sewer Service Area Map – School Parcel

### **Appendix B: Sewer System Hydraulic Analysis**

### **Appendix C: Existing Airport Sewer Exhibit**

## INTRODUCTION

This is the Sewer System Design Report for the proposed sewer improvements for the future school and park within Coconino County parcel 502-17-027 in Tusayan, Arizona. The project site is surrounded by the Kaibab National Forest to the west/south, the town of Tusayan to the north, and the ADOT airport to the east. See Figure 1 for a vicinity map of the project area. This report is submitted with the Concept Engineering plans dated November 2014. This report adheres to the ADEQ requirements as specified in Arizona Administrative Code Title 18: Environmental Quality – Chapter 9: Water Pollution Control (AAC R18-9).

The purpose of this Sewer Design Report is to assure the ADOT Grand Canyon Airport that in allowing the proposed school/park sewerline to connect to the ADOT sewer main, there will be sufficient remaining capacity in the airport sewer main for future ADOT expansion and growth. ADOT would grant an easement for the proposed school/park sewerline upon approval. The easement would also be for a water main extension from the Hydro System waterlines just north of the ADOT property. Refer to Appendix C for an exhibit showing the existing airport sewer just before tying into the Grand Canyon Sewer District Sewer (GCSD) system.

## SEWER SYSTEM

### *Proposed Sewer System Improvements – School/Park Extension Design*

This project will construct two (2) gravity sewerlines from the future school and park facilities respectively and tie into the existing gravity within the ADOT airport parcel (airport sewerline). The new sewer improvements consists of two (2) new gravity sewer mains (See Figure 2):

- 1) One sewer main consists of an 8-inch gravity sewerline servicing the future school site and tying into the existing airport 8-inch gravity sewer line.
- 2) One sewer main consists of an 8-inch gravity sewerline servicing the new park site and tying into the new school sewer.

An analysis was done to determine how much of the School parcel can reasonably be serviced by this proposed school/park sewer system, refer to Figure 3. It was determined that this proposed school/park sewer can service about 57 acres of the 80-acre property, or about 71%. This is assuming that the 'future onsite sewer' (refer to Figure 3) is no deeper than 15-feet and using 8-inch pipe at minimum slopes.

***Proposed Sewer System - Hydraulic Analysis – School/Park Extension Design***

The following criteria were obtained from the Table 1 Unit Design Flows (AAC R18-9).

**Table 1: Unit Design Flows (AAC R18-9 E302)**

<b>Wastewater Source</b>	<b>Unit</b>	<b>Sewage Design Flow per Unit (gpd)</b>
School - Staff & Office	Person	20
School - High School	Student	20
with showers, add	Student	5
with cafeteria, add	Student	3
School - Boarding	Resident	100
Park Public Restroom	Toilet	200

The sewer hydraulic analysis used the above information to calculate the flow in the sewer mains. The proposed sewer will be sized to accommodate the peak flow with a d/D ratio less than 0.75 in order to meet ADEQ requirements. The Peak flow equals the average day flow x peaking factor. The peaking factor is based on AAC R18-9-E301 (D)(1)(b). The peaking factor for the school sewer flow is 2.74, which is based on an upstream population less than 500. (The peaking factor for the park is 3.62, which is based on a population less than 100.) The Design Flow for the proposed system is shown in Tables 2A, 2B, and 2C.

**Table 2A: Design Flows Calculations - School Sewer (Upstream of Park)**

<b>Item</b>	<b>Population/Each</b>	<b>Sewage Design Flow per Unit (gpd)</b>	<b>Average Day Flow (gpd)</b>	<b>Peaking Factor</b>	<b>Peak Flow (gpd)</b>
Staff & Office	27	20	540		
Students	400	28	11,200		
Boarding Resident	22	100	2,200		
<b>Total =</b>	<b>449</b>		<b>13,940</b>	<b>2.74</b>	<b>38,196</b>

**Table 2B: Design Flows Calculations - Park Sewer**

Item	Each Toilet	Sewage Design Flow per Unit (gpd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow (gpd)
Public Restroom	6	200	1,200		
<b>Total =</b>	<b>6</b>		<b>1,200</b>	<b>3.62</b>	<b>4,344</b>

**Table 2C: Design Flows Calculations -School & Park Sewer**

Item	Population/Each	Sewage Design Flow per Unit (gpd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow (gpd)
Staff & Office	27	20	540	2.74	1,480
Students	400	28	11,200		30,688
Boarding Resident	22	100	2,200		6,028
Public Restroom	5	200	1,000	3.62	3,620
<b>Total =</b>	<b>454</b>		<b>14,940</b>		<b>41,816</b>

ADEQ standards allow for a minimum flow velocity of 2 ft/s for pipe sizes 8-inch and larger. The standards also allow a maximum velocity of 10 ft/s when flowing full. ADEQ uses Manning's equation with a coefficient of roughness (n) of .013 for all pipes sizes. All of the pipes within the development meet these standards by meeting the pipe slope criteria. The table below lists the allowable slopes for each pipe size.

<b>ADEQ Velocity Requirements</b>		
Pipe Size	Max	Min
8"	8.30%	0.33%

Detailed hydraulic sewer modeling results of the proposed sewer are in Appendix B. A few items to note per the detailed hydraulic results:

- 1) All of the pipes meet the minimum and maximum velocity standards of ADEQ.
- 2) All pipes meet the d/D ADEQ requirement. The d/D is approximately 0.05.

These calculations show that the extension to the sewage collection system as designed has adequate capacity and hydraulic properties to meet ADEQ requirements.



### ***Existing Airport Sewer System – Description and Hydraulic Analysis***

The Town of Tusayan wishes to connect a sewer extension from the school and park site to the existing ADOT airport sanitary sewer main leaving the Grand Canyon Airport. This main is located on ADOT Aeronautics property and an easement from ADOT Right-of-Way is required over this facility. The airport consists of a terminal, facilities for airplane/helicopter storage buildings, site seeing trip facilities, Tusayan Town Hall, Emergency Services, and airport housing. The airport has significant land available for increased development. Development at the airport would follow the *Grand Canyon National Park Airport – Terminal Area Plan* dated December 2009. This development includes a larger terminal with additional aircraft gates, additional parking, hangar space, airport housing, etc. Discussions with the airport management suggested that future development would be equivalent to 3 times the current level or in other words, 3 times the wastewater generated now.

The purpose of this analysis is to document the impact of the school and park on the available capacity of the sewerline leaving the airport before tying into the GCSD main. This analysis takes into account future development on the airport property. The following analysis looks at the current level of sewer generation from the airport with the addition of the school and park first (**Existing Condition**) and then looks at the future level of sewer generation from the airport with the school and park (**Future Condition**). We have obtained from GCSD the records of the sewage flow from the busiest month at the airport to use as a baseline.

The most recent busiest month at the airport produced 378,100 gallons per month (June 2014).

#### **Existing Condition**

Existing Average Day Flow (ADF) = 378,100 gallons per month = **12,600 gpd**

Peak Flow = ADF x Peaking Factor, with Peak Factor = 3.14 (assume population = 200)

Peak Flow = 12,600 gpd x 3.14 = **39,564 gpd**

#### **Future Condition**

Future ADF = Existing ADF x 3 (growth factor per airport management)

Future ADF = 12,600 gpd x 3 = **37,800 gpd**

Peak Flow = Future ADF x Peaking Factor, with Peak Factor = 3.14 (assume population = 200)

Peak Flow = 37,800 gpd x 3.14 = **118,692 gpd**

Assuming that the existing airport sewer has a 0.5% grade downstream of the connection with the proposed school/park sewerline, which is a conservative assumption, this equates to a full flow capacity of **553,700 gpd** using a manning's n-value of 0.13. For the **Existing Condition**, the proposed school and park peak flow (41,816 gpd) plus the existing airport peak flow (39,564 gpd) equals **81,380 gpd**. This corresponds to a q/Q ratio of  $81,380/553,700 = 0.15$  and a corresponding d/D ratio of **0.27**. For the **Future Condition**, the proposed school and park peak flow (41,816 gpd) plus the future airport peak flow (118,692 gpd) equals **160,508 gpd**. This corresponds to a q/Q ratio of  $160,508/553,700 = 0.29$  and a corresponding d/D ratio of **0.37**. Both the existing and future conditions show a d/D ratio well below the ADEQ maximum of 0.75.

If a backup was to occur in the airport sewer line downstream of the connection with the school and park, this backup would not damage the airport facilities. The backup would seep out of the manhole at the connection point with the school and park, manhole 34, as seen on the exhibit in Appendix C. This is due to the fact that the rim elevation of Manhole 34 is lower than the invert elevation of manhole immediately upstream, Manhole 35, by approximately 6 inches.

## **SUMMARY AND CONCLUSIONS**

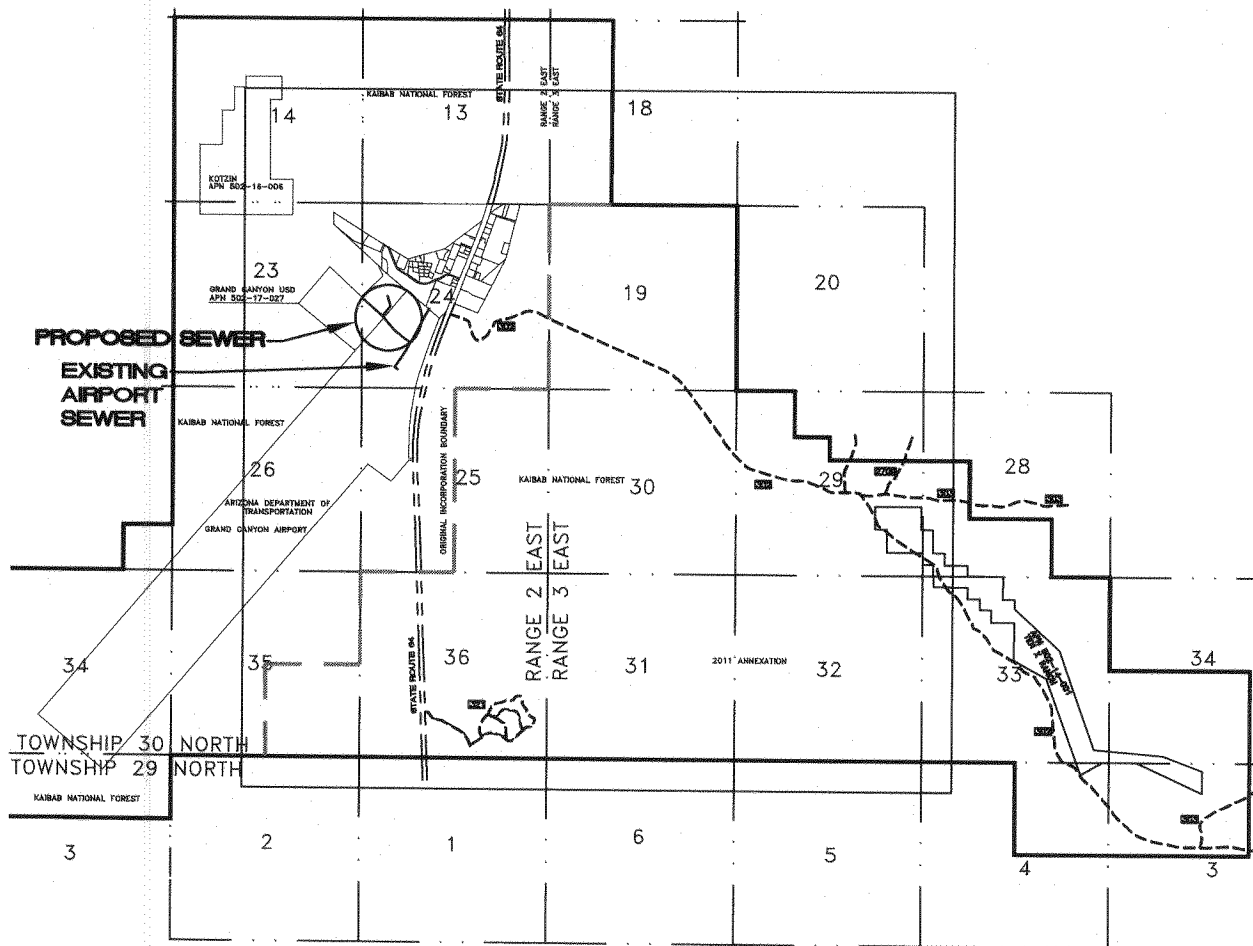
This Sewer System Report shows that the design of the sewer system in this area follows the Arizona Department of Environmental Quality standards. This report also addresses that there will be sufficient remaining capacity in the airport sewer main for future ADOT expansion and growth at the airport when including the future school and park to sewer into the airport sewer. If ADOT is satisfied with this analysis, the Town would request ADOT to grant an easement for the proposed school/park sewerline. The Town and school would enter into an agreement to share in the maintenance costs of the airport sewerline between the connection with the school and park and the GCSD connection north of Long Jim road (approximately-1425 feet).

## **APPENDIX A: EXHIBITS**

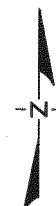
**Figure 1: Vicinity Map**

**Figure 2: Proposed School Sewer**

**Figure 3: Sewer Service Area Map for School parcel**



# **SCHOOL SEWER VICINITY MAP** TUSAYAN, ARIZONA (NOT TO SCALE)



DRAFTED BY: MBF

DATE: 10/31/14

PROJ. NO.: 114682

FN: VICINITY MAP.dwg

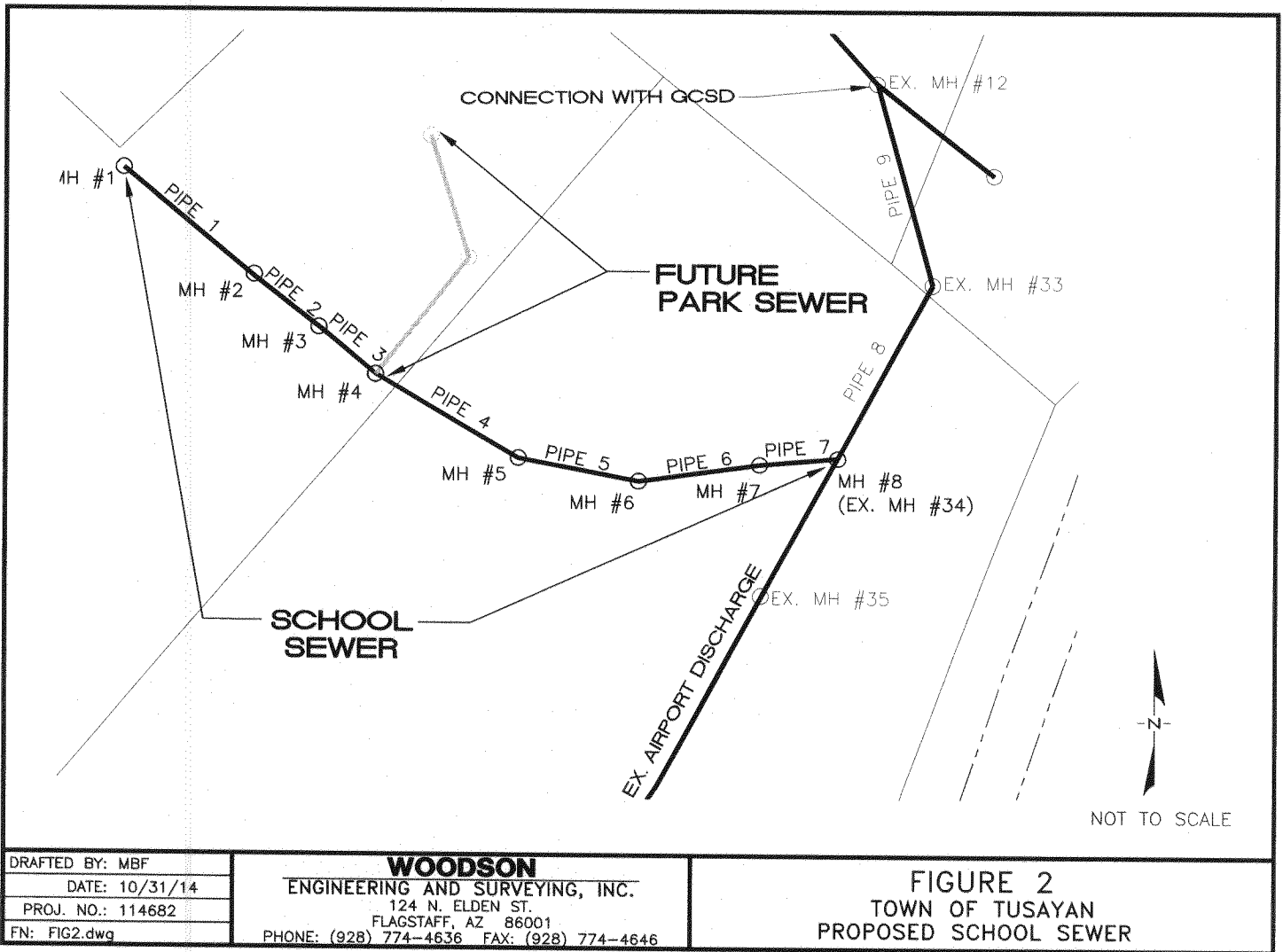
**WOODSON**

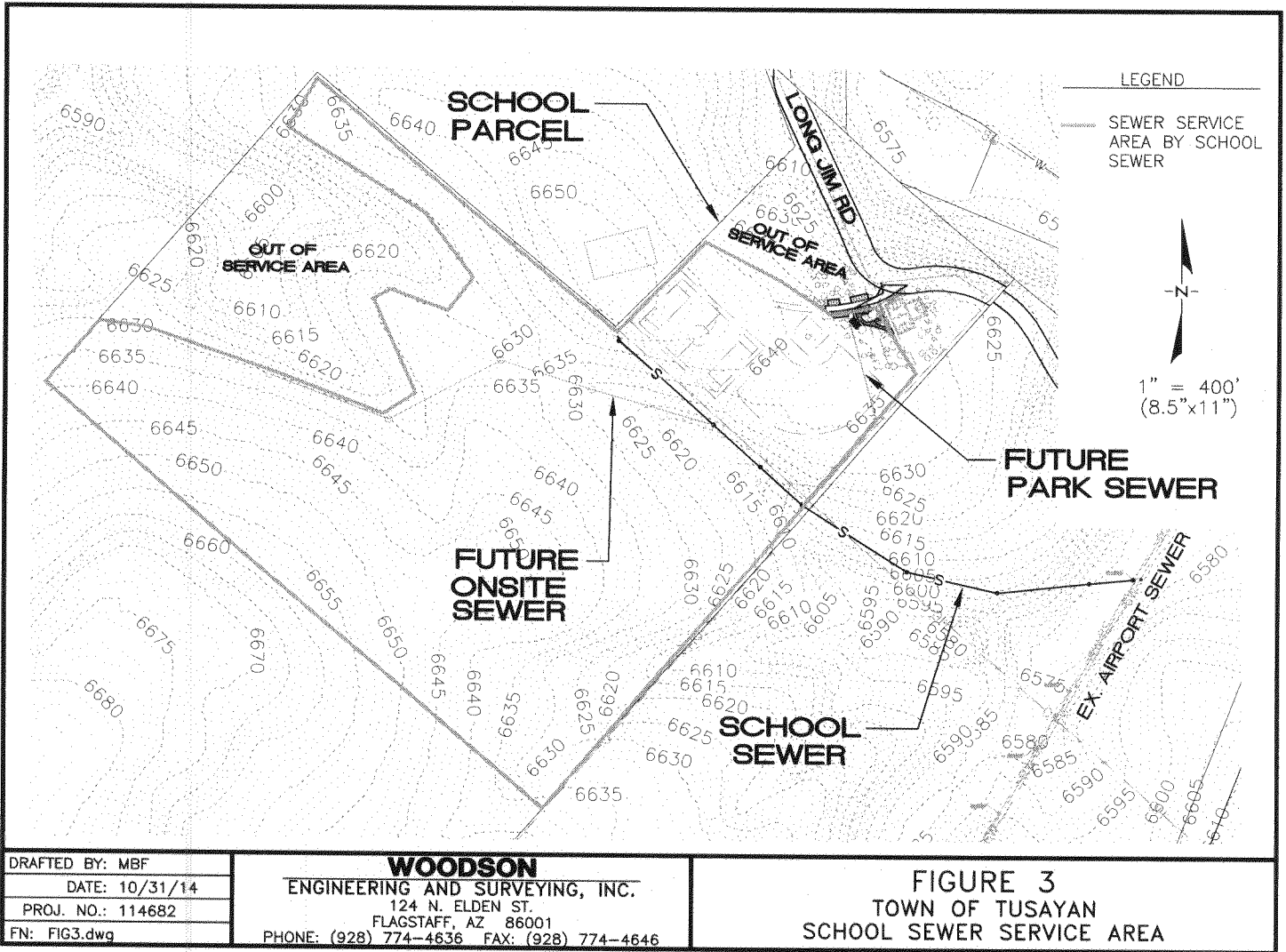
ENGINEERING AND SURVEYING, INC.

124 N. ELDEN ST.  
FLAGSTAFF, AZ 86001

PHONE: (928) 774-4636 FAX: (928) 774-4646

**FIGURE 1**  
**TOWN OF TUSAYAN**  
**VICINITY MAP**





## **APPENDIX B: SEWER SYSTEM HYDRAULIC ANALYSIS**

Table: Sewer Design Table - School/Park Sewer in Tusayan, AZ

Project Number: 114682

Date: 11/6/14

Pipe ID <sup>1</sup>	Start MH <sup>1,2</sup>	End MH <sup>1,2</sup>	Line Diameter (inches) <sup>2</sup>	Sewer Line Slope (%) <sup>2</sup>	Length (ft) <sup>2</sup>	Start NG Rim Elevation (feet) <sup>2</sup>	Start Invert Elevation <sup>2</sup>	End NG Rim Elevation (feet) <sup>2</sup>	End Invert Elevation <sup>2</sup>	Start MH Cover (ft) <sup>3</sup>	End MH cover (feet) <sup>3</sup>	Peak Flow (gpd) <sup>4</sup>	Capacity (gpd) <sup>5</sup>	q/Q <sup>6</sup>	d/D <sup>7</sup>	Full Flow Velocity (fps) <sup>8</sup>
<b>Proposed School/Park Sewer</b>																
1	MH #1	MH #2	8	5.29%	395.2	6643.88	6639.90	6622.97	6619.00	4.0	4.0	38,196	1,800,031	0.02	0.05	8.0
2	MH #2	MH #3	8	3.29%	197.8	6622.97	6617.50	6614.44	6611.00	5.5	3.4	38,196	1,418,923	0.03	0.05	6.3
3	MH #3	MH #4	8	1.08%	176.0	6614.44	6610.90	6612.94	6609.00	3.5	3.9	38,196	813,387	0.05	0.05	3.6
4	MH #4	MH #5	8	1.88%	394.3	6612.94	6608.90	6605.48	6601.50	4.0	4.0	41,816	1,072,358	0.04	0.05	4.8
5	MH #5	MH #6	8	1.93%	290.5	6605.48	6601.40	6599.73	6595.80	4.1	3.9	41,816	1,086,692	0.04	0.05	4.8
6	MH #6	MH #7	8	8.01%	289.8	6599.73	6594.20	6575.56	6571.00	5.5	4.6	41,816	2,214,675	0.02	0.05	9.8
7	MH #7	MH #8 (Ex. MH #34)	8	0.65%	138.6	6575.56	6570.90	6573.99	6570.00	4.7	4.0	41,816	630,656	0.07	0.05	2.8
<b>Existing Airport Sewer Downstream of School/Park Connection<sup>9</sup></b>																
8	Ex. MH 34	Ex. MH 33	8	0.50%	n/a	6573.99	n/a	n/a	n/a	n/a	n/a	160,508	553,478	0.29	0.37	2.5
9	Ex. MH 33	Ex. MH 12	8	0.50%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	160,508	553,478	0.29	0.37	2.5

- Notes:
- 1) See Figure 2 of Report
  - 2) See Plans dated November 2014
  - 3) MH Cover = MH Rim - MH Invert Elevation
  - 4) See Tables 2A, 2B, and 2C in report for Peak Flow calculation for School and Park
  - 5) Capacity is calculated based on Manning's equation with an n-value = 0.013
  - 6) q/Q is Peak Flow/Capacity
  - 7) d/D is derived from the Hydraulic Elements Chart using q/Q; values less than .1 were noted as 0.05.
  - 8) Full Flow Velocity = Capacity / Area
  - 9) Existing Airport Sewer Downstream of School/Park Connection hydraulic analysis shown as Future Condition which is worst case scenario, see Pg 4 of report.



## **APPENDIX C: EXISTING AIRPORT SEWER EXHIBIT**



Airport Sewer

**Legend**  
 ● Wastewater Treatment Plant  
 ● Unknown Location  
 ● Sewer Location  
 Pipe Diameter (Showing Flow Direction)  
 — 3" — 8 inch Pipe  
 — 3" — 18 inch Pipe  
 Outline (DOE)  
 Allowable (PCW)  
 PDWF = Peak Dry Weather Flow

N  
 0 100 200  
 Feet  
 0 50 100  
 Meters  
 1 inch = 200 feet

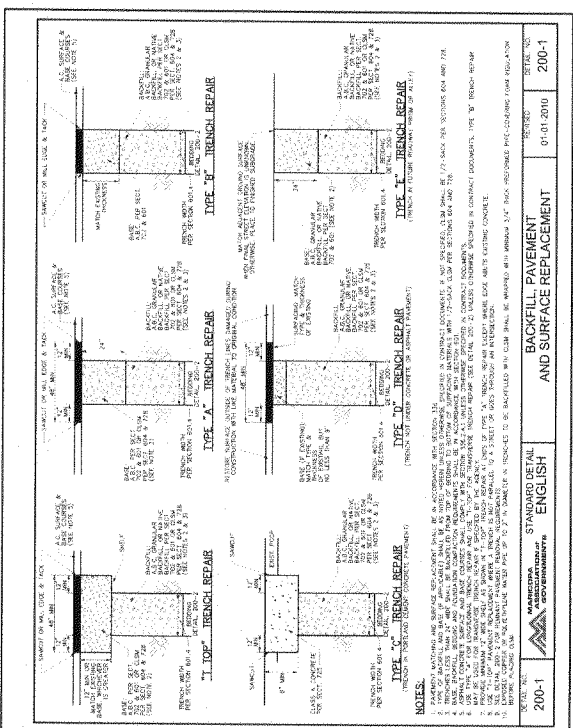
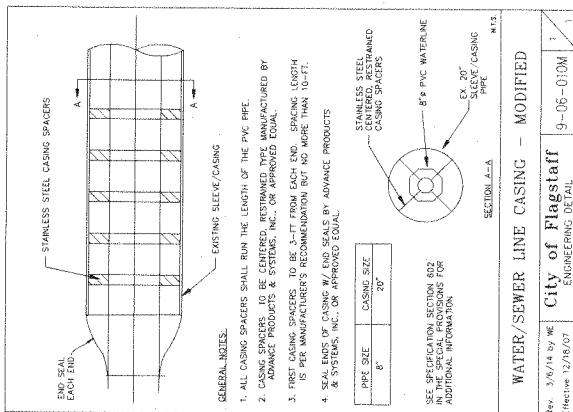
TOWN, 2013: Portion of Sections 23-24,  
 Coconino County, Arizona.  
 Copyright Map & Technology Inc. (DOE)  
 7.5' Contourlines  
 Image Source: NADP, 2013

Wastewater Resources, Inc.  
 Sewer - Flow - Report  
 10/1/2013 10:00 AM

**SOUTH GRAND CANYON SEWER DISTRICT**  
 Sewer Capacity Analysis  
 Results Map  
 Figure 1







NOT FOR RECORDING  
PRELIMINARY  
60%  
NO OBSERVATION

401 CLEAR & CRUB PER MAG SS 201.

408 (1 L.S.) INSTALL TEMPORARY FENCING AROUND TREES TO PREVENT DAMAGE DURING CONSTRUCTION PER LANDSCAPE PLANS AND SPECIFICATIONS. SEE LANDSCAPE PLAN FOR LOCATIONS OF DETERMINED SENSITIVE

(1897 LF.) INSTALL 8" DIA. PVC SEWER LINE IN ACCORDANCE WITH MAG SS 801 & 615. TYPICAL TRENCHING AND BACK FILL PER MAG STD DET 200, TYPE D. SEE SHEET 3.

(7 EA) CONSTRUCT 48" DIAMETER MANHOLE IN ACCORDANCE WITH MAG SD NO. 42D & NO. 424 AND DETAIL SHEET 3.

(1925 L.F.) INSTALL 8" DIA. PVC WATERLINE (C-800/CL 200) COMPLETE INCLUDING ALL APPURTENANCES PER MAG SS 810. TYPICAL.

200, TYPE D. SEE SHEET 3, DEFLECT JOINT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

(2 EA) INSTALL 8" DIA. 22.5' BEND. THRUST  
BLOCK IN ACCORDANCE WITH MAG SD NO.  
350.

(1 EA) TAP NEW 8" PVC WATERLINE TO EXISTING 8" WATERLINE WITH A TAPPING SLEEVE AND VALVE SET. MAC 515.00 3.60 CONTRACTING

(1 EA.) INSTALL 2" CURB STOP WITH  
FLUSHING PIPE PER MAG STD DET SWD, TYPE  
B, AT END OF LINE. PROVIDE 6" X 4"  
MARKER 4" ABOVE GRADE.

(1 EA) MAINTAIN MINIMUM VERTICAL SEPARATION BETWEEN NEW WATERLINE AND NEW SEWERLINE-2'. VERTICAL CONFLICT BETWEEN NEW WATERLINE AND NEW SEWERLINE. COLLECTOR, MAIN, COLLECTION & AERIAL

REALIGNMENT OF NEW WATERLINE IN  
ACCORDANCE WITH MAG SD NO. 370. PROVIDE  
ADDITIONAL WATER PROTECTION PER MAG SD  
NO. 404.

1

10

CONTROL POINTS

MM	NORTHING	EASTING
1	190312.21	635108.44
2	19068.46.85	636404.97
3	190874.30	636992.86

4	808357.25	838384.27
5	808385.56	83837.04
6	808320.55	838300.14
7	808351.53	838388.04

GENERAL NOTES

ALL ELEVATIONS SHOWN ON THE PLANS ARE FINISHED SURFACE ELEVATIONS (EXCEPT AS IS FROM USGS QUAD MAP TULSAYAN WEST.

THE INFORMATION ON THESE CONSTRUCTION PLANS CONCERNING THE TYPE, SIZE, AND LOCATION OF UTILITIES HAS BEEN SHOWN BASED ON THE BEST INFORMATION AVAILABLE. THE

DETERMINATION OF EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION, IS THE CONTRACTORS RESPONSIBILITY TO PROTECT ALL EXISTING UTILITIES, IN PLACE, UNLESS OTHERWISE NOTED OR SPECIFIED. IT

FOR SCALE: 1" = 60'  
NEW SCALE: 1" = 2'

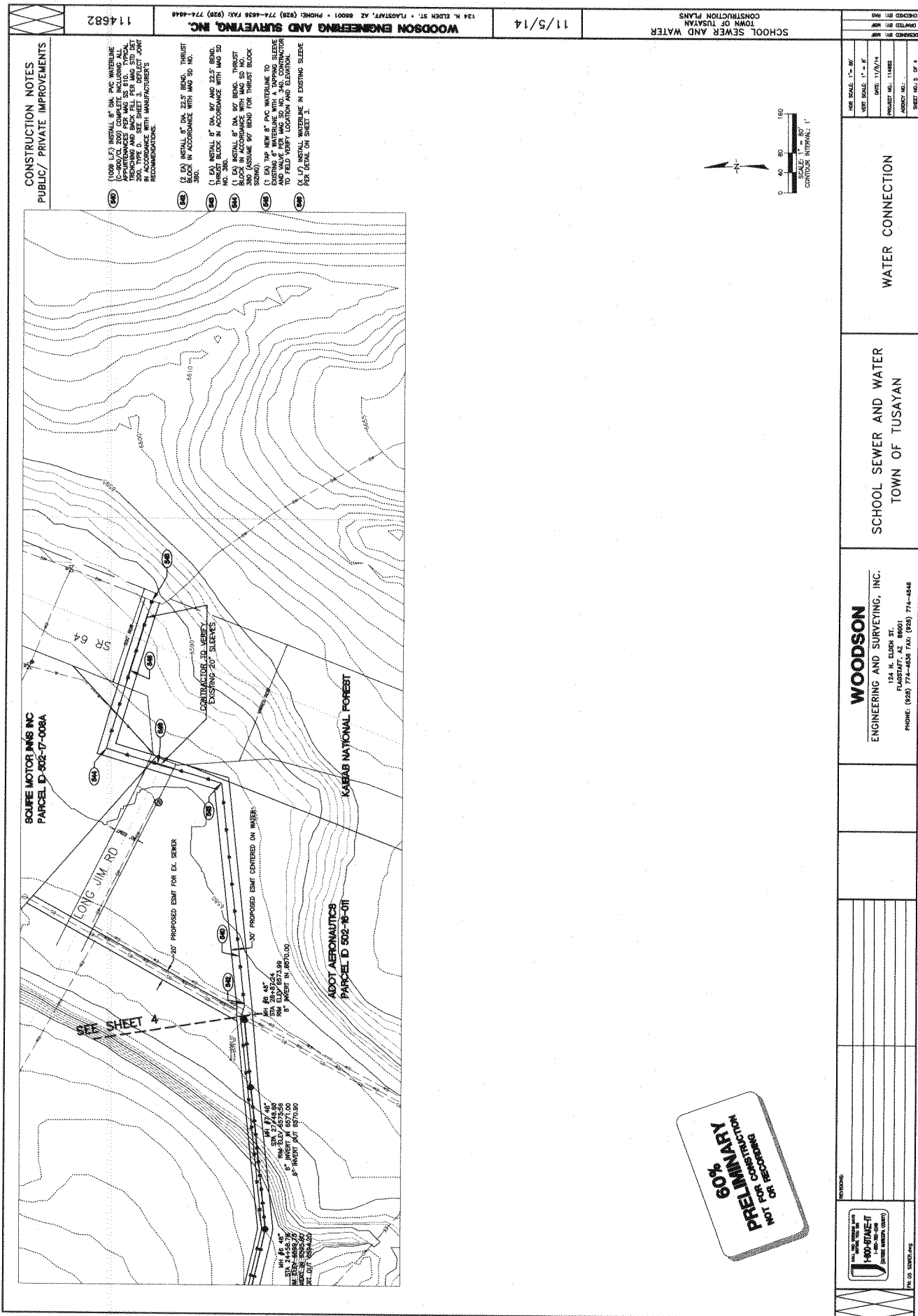
DATE: 11/09/14	PROJECT NO.: 114882	AGENCY NO.:
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[illegible]

**SCHOOL SEWER AND WATER**  
**TOWN OF TUSAYAN**  
124 N. ELDER ST.  
FLAGSTAFF, AZ 86001  
PHONE: (928) 774-4635 FAX: (928) 774-4646

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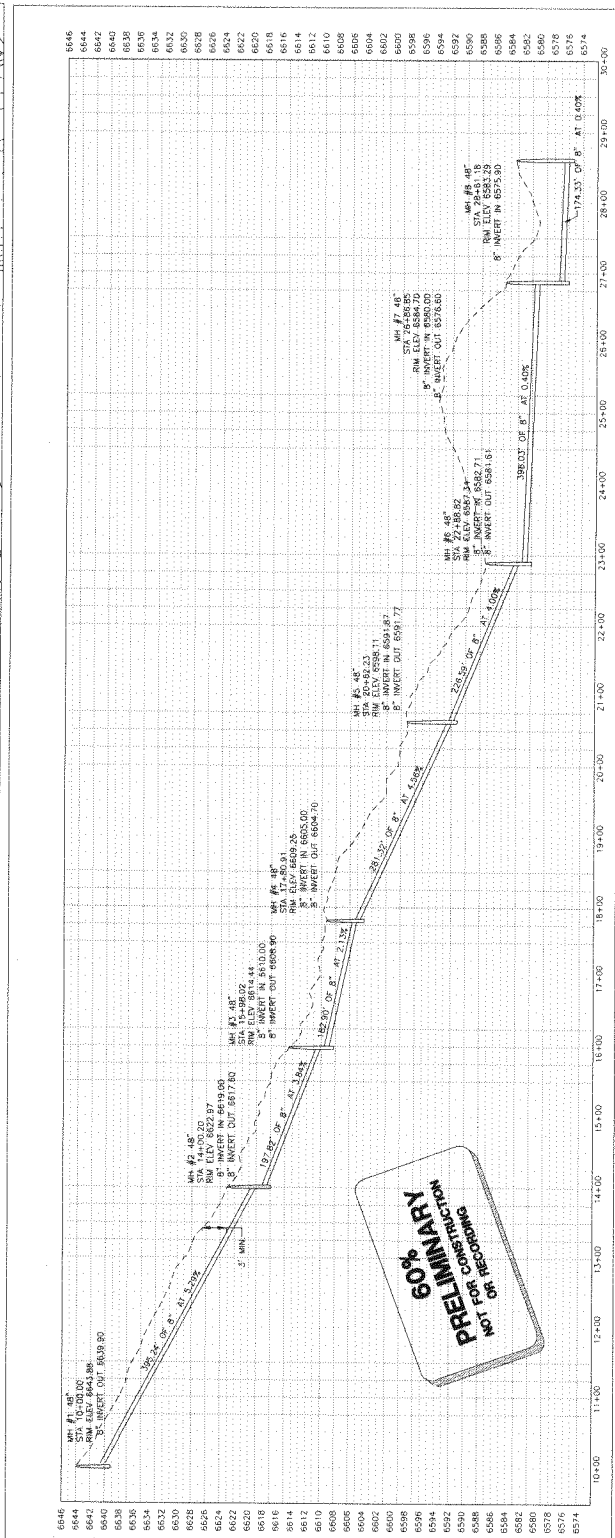
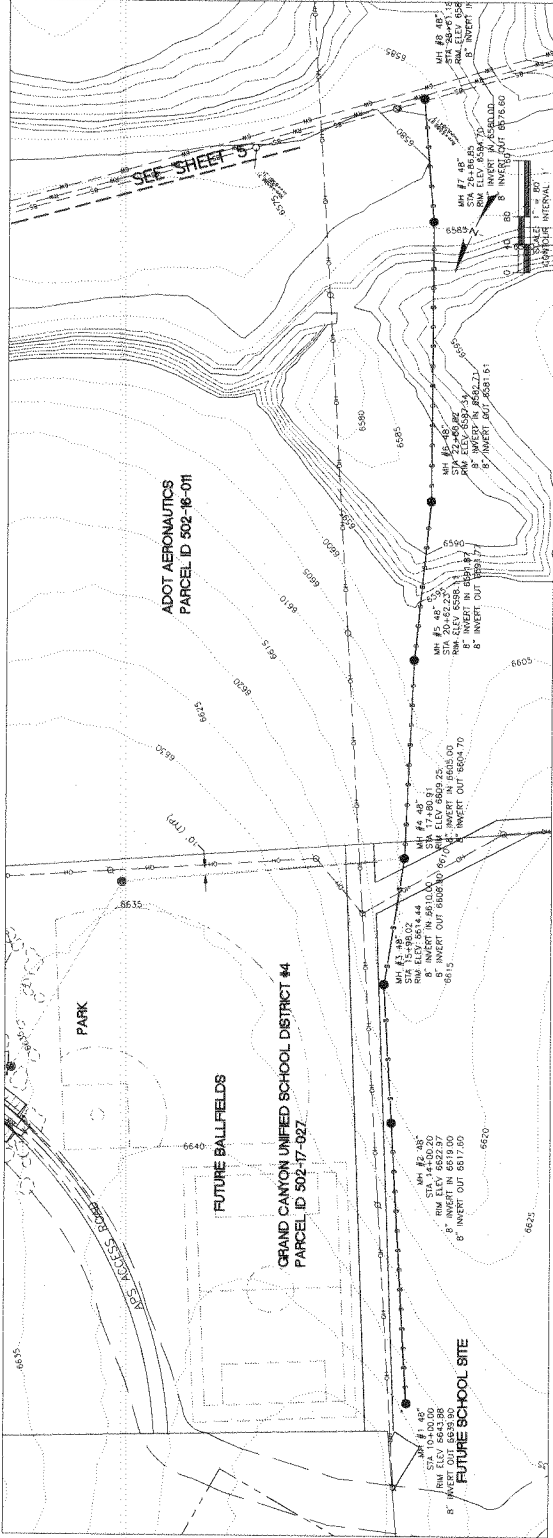


**PRELIMINARY**  
90%  
NOT FOR RECORD  
ENGINEERING  
CONSULTING  
CORPORATION

SCHOOL SEWER AND WATER TOWN OF TUSAYAN		WOODSON ENGINEERING AND SURVEYING, INC. 124 N. ELDER ST. TUSAYAN, AZ 85601 PHONE: (928) 774-4448 FAX: (928) 774-4448		SCHOOL SEWER AND WATER TOWN OF TUSAYAN		WATER CONNECTION		WOODSON ENGINEERING AND SURVEYING, INC. 124 N. ELDER ST. TUSAYAN, AZ 85601 PHONE: (928) 774-4448 FAX: (928) 774-4448		SCHOOL SEWER AND WATER TOWN OF TUSAYAN	
SHEET NO. 5 OF 4		DATE: 11/5/14		PROJECT NO.: 114682		DRAWN BY: J. L. WOODSON		CHECKED BY: J. L. WOODSON		DATE: 11/5/14	
SHEET SCALE: 1" = 80'		VERT. SCALE: 1" = 8'		HORIZ. SCALE: 1" = 80'		CONTOUR INTERVAL: 1'		SCALE: 1" = 80'		CONTOUR INTERVAL: 1'	

- CONSTRUCTION NOTES**  
**PUBLIC/ PRIVATE IMPROVEMENTS**
- (1) 30" DIA. 30' RADIUS, THURST 300.
  - (2) 30" DIA. 30' RADIUS, THURST 300.
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	<b>WOODSON</b> ENGINEERING AND SURVEYING, INC. 124 N. ELLEN ST. FLAGSTAFF, AZ. 86001 PHONE: (928) 774-4836 FAX: (928) 774-4848		<b>SCHOOL SEWER AND WATER</b> TOWN OF TUSAYAN		<b>SCHOOL SEWER OPTION 2</b> STA 10+00 TO 28+90		CHECKED BY: RAS DATE: 1/12/14 PROJECT NO.: 14-002 SHEET NO.: 14-002
	124 N. ELLEN ST. • FLAGSTAFF, AZ. 86001 • PHONE: (928) 774-4836 FAX: (928) 774-4848		11/5/14		114682		



ITEM NO. 9

**MANAGER'S REPORT**  
**November 19, 2014**

- I. **ADMINISTRATION:** Staff continues to complete paperwork for anticipated December 1, 2014 start-up of ASRS.
- II. **ADOT** – Town picked up the 6'x8' sign frame that will house the three service organization signs on the posts that has the Gateway Community sign on it. TAPCO will demonstrate and explain blinker signs option to improve safety at two crosswalks in the November 19<sup>th</sup> Council meeting.
- III. **BROADBAND** – Commnet has started preliminary work/analysis to improve bandwidth to town hall, while staff continues to consider alternatives to improve broadband services for the community.
- IV. **CDBG** – Rick Schuller with Woodson sent out proposed utility extensions plans for sewer and water which ADOT has and is now reviewing. Further, the School District attorney is checking to see if the Board would approve the conceptual plan to extend utilities to the proposed restroom facility.
- V. **COMMUNITY PARK** – Woodson continues to work on putting a design and build bid together for the grading and dirt work for the baseball and soccer fields.
- VI. **COUNCIL FOLLOWUP:** a) Staff received the Sports Complex sign from Northern Arizona Signs (NOAZ) and will be installing it soon. Council can see where the sign will be installed along the driveway for ease of seeing these rules.
- VII. **DEVELOPMENT/P&Z MEETING** –Woodson continues to draft the Subdivision Regulations for the town, while Willdan has submitted a draft of the Zoning Code.
- VIII. **DRAINAGE** – J2 Engineering is working on plans and applications to put in drainage basins on Forest Service land located to the northeast of the community to improve drainage.
- IX. **ELECTIONS** – The initiative to have the mayor elected directly passed and the attorney is now working on incorporating that language into the proposed town codes. Council member Sanderson will be sworn in at the November 19th meeting and the canvassing of the vote will occur when the County provides the official vote count.
- X. **MUNICIPAL CODE** – Staff put draft Municipal Code in binders and presented to the Council. Council will now work through these chapters as scheduled with the attorney involved to insure we keep it legal.
- XI. **PUBLIC OUTREACH** – 1) Fire District representatives are coming soon to discuss funding alternatives with the Council; 2) staff invited a representative from the National Park Service to review what is occurring in the park regarding Xanterra and contracted services, but they've not responded as yet.
- XII. **STILO** – Stilo and the Town are waiting for the Forest Service to approve a Cost Recovery Agreement, which will ultimately be brought to the Council for their consideration. The Forest Service is currently working to find sufficient personnel in order to process this request.
- XIII. **UPCOMING TRAINING AND MEETINGS:** 1) the Clerk attended the best practices Fall Clerk training on November 12, 2014 in Fountain Hills; 2) the Manager and Mayor attended the GAMA meeting and the regional managers meeting on November 7, 2014 in Flagstaff; 4) the Maintenance Worker attended MH installation training on November 14, 2014 in Phoenix; and 5) the Manager will be attending on January 13<sup>th</sup> and 14<sup>th</sup> Mitigation for Emergency Managers training in Flagstaff as part of updating the Five-Year Plan.